SHER, Grigoriy Samuilovich; REMEZOV, N.S., inzh., ved. red.; MALOV, A.N., kand. tekhn. nauk, red.; SOROKINA, T.M., tekhn. red.

[Combination dies of consecutive and simultaneous action]Kombinirovanie shtampy posledovatel'nogo i sovmeshchennogo deistviia Moskva. Filial Vses. in-ta nauchn. i tekhn. informatsii, 1958. 13 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema . . No.M-58-142/3) (MIRA 16:3)
(Sheet-metal working machinery)

SHER, G.S., inzh.

A press for cutting and bending cleats. Trakt.i sel'khozmash. no.8:43-44 Ag '62. (MIRA 15:8)

1. Nauchno-issledovatel'skiy institut tekhnologii traktornogo i sel'skokhozyaystvennogo mashinostroyeniya.
(Agricultural machinery--Equipment and supplies)
(Power presses)

1. [illegible], I.

2. USSR (600)

4. Construction Industry - Finance

7. [illegible] possibilities for lowering construction costs, Fin, 1, kred, SSSR No.2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

SHER, I., prof.; SAVVIN, B.

Unfinished construction and ways to reduce it. Fin.SSSR 20 no.3: 26-35 Mr '59. (MIRA 12:7)

1. Chlen Pravleniya Prombanka SSSR (for Savvin).
(Construction industry)

SHER, I., prof.

Indices of the economic effectiveness of capital investments and utilization of capital assets. Fin. SSSR 22 no.7:43-49 Jl '61. (MIRA 14:7)

(Capital)

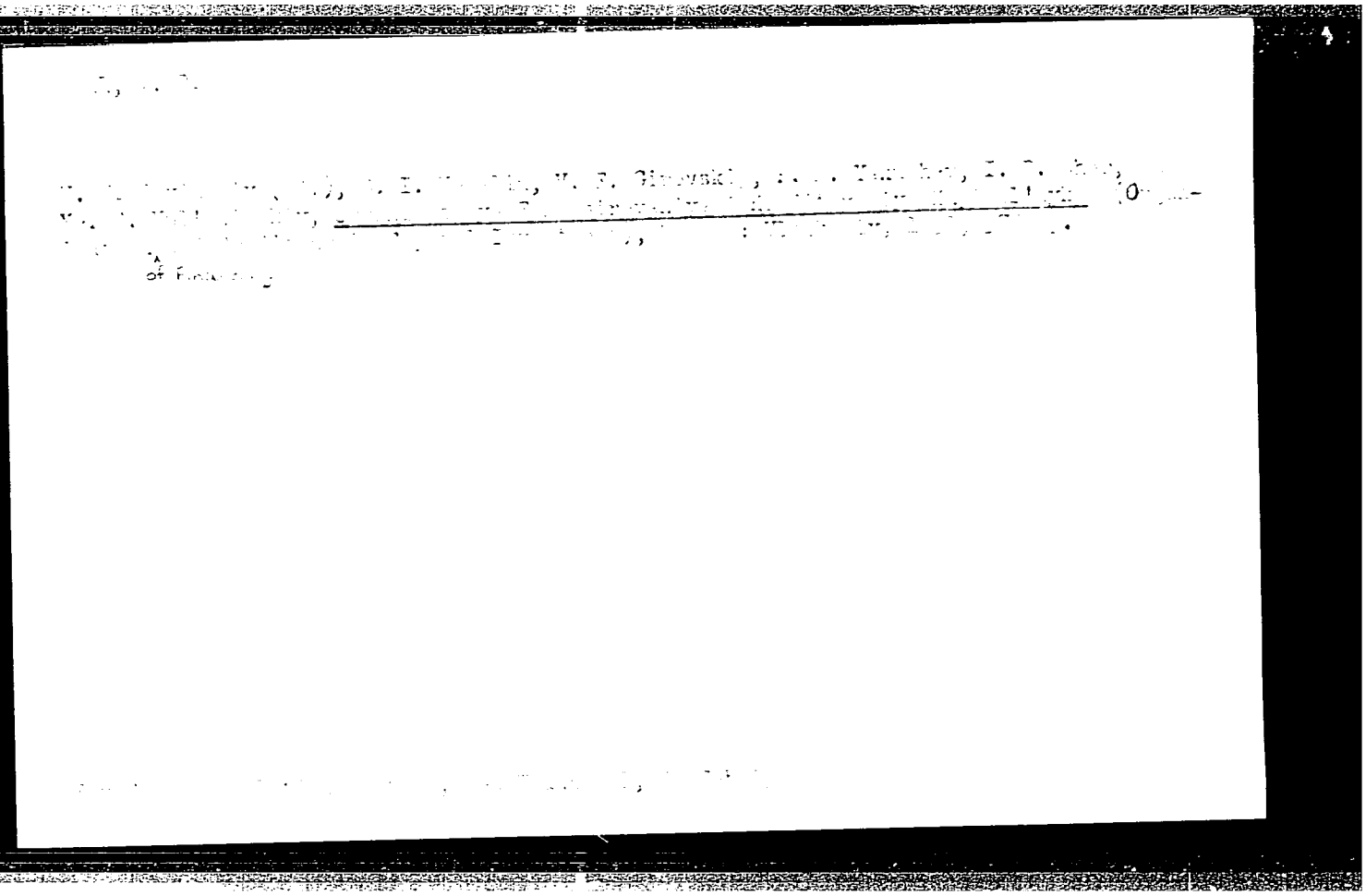
SHER, I., prof.

Organization of finance in construction and assembly contracting organizations. Fin.SSSR 37 no.3:47-54 Mr '63. (MIRA 16:4)
(Construction industry--Finance)

SHER, I.D.

[Financing major reconstruction work in industry] Finansirovanie kapital'-nykh vosstanovitel'nykh rabot v promyshlennosti. Moskva, Gosfinizdat, 1945. 46 p. (MLRA 6:7)

(Construction industry--Russia)



Name: SHER, Isaak Dmitriyevich

Dissertation: Sources and methods of financing capital investments in the state industry of the USSR (1926-1950)

Degree: Doc Economic Sci

Affiliation: [not indicated]

Defense Date, Place: 30 Jun 55, Council of Moscow Finance Inst

Certification Date: 30 Jun 56

Source: BMVO 5/57

ALLAKHVERDYAN, D.A., red.; VINOKUR, R.D., kand.ekon.nauk, dots, red.; PETROV, A.I., red.; SAVVIN, B.Ya., red.; SHER, I.D., doktor ekon.nauk, red.

[Capital investment planning and ruble control in connection with fulfillment of the plan for putting new plants and equipment into operation; papers of a conference] Planirovanie kapital'nykh vlozhenii i kontrol' rublem za vypolneniem plana vvoda v deistvie osnovnykh fondov; materialy nauchnogo soveshchaniia. Moskva, 1957. 186 p. (MIRA 11:5)

1. Moscow. Finansovyy institut. 2. Moskovskiy finansovyy institut (for Sher, Vinokur). 3. Chlen pravleniya prombanka SSSR (for Petrov, Savvin)
(Finance)

SHER, Isaak Dmitriyevich; KONDRASHEV, D., otvetstvennyy red.; TOLYPINA, O., red.izd-va; DZHATIYEV, S., tekhn.red.

[Financing capital investments in state industry in the U.S.S.R.] Finansirovanie kapital'nykh vlozhenii v gosudarstvennuiu promyshlennost' SSSR. Moskva, Gosfinizdat, 1958. 240 p. (MIRA 11:7)
(Capital investments)

LYUBIMOV, N.N., prof.; ALLAKHVERDYAN, D.A., dotsent; STAM, V.M., dotsent; GOL'DENBERG, A.M., dotsent; VINOKUR, R.D., dotsent; AZARKH, M.R., dotsent; SHER, I.D., prof.; RIVKIN, B.B., dotsent; ABROSKIN, A.A., dotsent; DYMSHITS, I.A., dotsent [deceased]; KON'SHIN, F.V., prof.; IPATOV, P.F., dotsent; NIKOL'SKIY, P.S., kand.ekon.nauk; ROSHCHINA, L., red.; TELEGINA, T., tekhn.red.

[Finance in the U.S.S.R.; a collection] Finansy SSSR. Avtorskii kollektiv pod rukovodstvom D.A.Allakhverdiana i N.N.Liubimova. Moskva, Gosfinizdat, 1958. 391 p. (MIRA 12:4)

1. Moskovskiy finansovyy institut (for all except Roshchina, Telegina). (Finance)

ALLAKHVERDYAN, D.A., prof., red.; BACHURIN, A.V., red.; SITARYAN, S.A., starshiy nauchnyy sotrudnik, red.; SHER, I.D., prof., red.; FILIPPOVA, E., red.; TELEGINA, T., tekhn.red.

[Problems of Soviet finance] Problemy sovetskikh finansov. Moskva, Gosfinizdat, 1960. 210 p. (MIRA 13:12)

1. Moscow. Finansovyy institut. 2. Direktor Nauchno-issledovatel'skogo finansovogo instituta (for Bachurin). 3. Moskovskiy finansovyy institut (for Allakhverdyan). 4. Nauchno-issledovatel'skiy finansovyy institut (for Sitaryan). 5. Moskovskiy finansovyy institut (for Sher).
(Finance)

PODSHIVALENKO, P.D.; SHER, I.D.; NADEZHDINA, A., red.; TELEGINA, T., tekhn.red.

[Financing and issuing credit for capital investments] Finansirovanie i kreditovanie kapital'nykh vlozhenii. Kollektiv avtorov pod rukovodstvom P.D.Podshivalenko i I.D.Shera. Moskva, Gosfinizdat, 1960. 376 p. (MIRA 14:5)
(Capital investments)

SHER, I.D., prof.,; TOLSTYKH, A.N. Prinimali uchastiye: RYBAKOVA, T.A.; BOGACHEV, K.K.; KULESHOV, F.M.; PETROV, A.I.; NADEZHDINA, A., red.; TELEGINA, T., tekhn. red.

[Accounting and operational technique in the Construction Bank; textbook]Uchet i operatsionnaia tekhnika v stroibanke; uchebnoe posobie. Kollektiv avtorov pod rukovodstvom I.D.Shera i A.N.Tolstykh. Moskva, Gosfinizdat, 1961. 215 p. (MIRA 14:12)
(Banks and banking--Accounting)

ALLAKHVERDYAN, D.A., prof.; BATOV, P.F., dots.; STAM, V.M., dots.; ABRAMSKIN, A.A., dots.; VINOKUR, R.D., dots.; AZARKH, M.R., dots.; SHER, I.D., prof.; KON'SHIN, F.V., prof.; NIKOL'SKIY, P.S., dots.; KONDRAT'YEV, A., red.; FILIPPOVA, E., red.; LEBEDEV, A., tekhn. red.

[Finances of the U.S.S.R.] Finansy SSSR. Moskva, Gosfinizdat, 1962. 412 p. (MIRA 16:1)

1. Moskovskiy finansovyy institut (for all except Kondrat'yev, Filippova, Lebedev).

(Finance)

113-58-6-15/16

AUTHOR: Sher, I.G. and Teploukhov, F.V.

TITLE: Mechanization of Stamping Operations in Wheel Production (Mekhanizatsiya shtampovochnykh operatsiy v kolesnom proizvodstve)

PERIODICAL: Avtomobil'naya promyshlennost', 1958, Nr 6, pp 42-43 (USSR)

ABSTRACT: The authors describe various stripping and knock-off devices in the process of stamping wheels for different models of Soviet automobiles, such as the ZIS-5 and the YaAZ-200. There are 4 figures.

ASSOCIATION: Chelyabinskiy kuznechno-pressovyy zavod (Chelyabinsk Forge-Pressing Plant)

Card 1/1 1. Automobile industry--USSR 2. Wheels--Production--Methods

[redacted], L. P.

"Application of the Similitude Method to the Spark Discharge on the Surface of a Dielectric," Zhur. Tekh. Fiz., 14, Nos. 10-11, 1944. Inst., Physics Inst. im. P. N. Lebedev, Dept. Physico-Math. Sci., Acad. Sci., -1943-.

SHCHEGOL', Sh.S.; SHER, L.I.; GEVCHIAN, N.N.

Formation of acetylenic hydrocarbons in the dehydrogenation of butylenes to bivinyl. Azerb. khim. zhur. no. 2:8-11 '65. (MIRA 18:12)

1. Submitted Dec. 10, 1964.

SHER, S

TELEVISION

"Instrument for Television Alignment" by F. Kuz'miuskiy and S. Sher, Radio No 1, January 1950, pp 41-43.

The apparatus described in this article can be used for displaying the frequency characteristic of the amplifier circuits of the television directly on the screen of the kinescope of the television that is being repaired or aligned. The instrument consists of an fm oscillator, a modulator, a marker device consisting of a crystal oscillator, a multiplier and mixer, amplifier, and a mixing stage intended for visual observation of the frequency characteristic. The diagram of the equipment is given as is an external view and operating instructions.

Card: 1/1

[illegible], S. (Kiyev); KONSTANTINOVSKIY, A. (Kiyev)

Aperiodic wide-band f.m. detector. Radio no.1:38 Ja '60. (MIRA 13:5)
(Radio detectors)

SHER, S. I.

"A Case of Intermittent Exophthalmus," Vest. Oftamol., 27, No. 1, 1948. Mar., Fifth District Military Hosp., -c1948-.

SHER, S. D.

USSR

Change of the mineral composition of quartz veins by intrusions. I. I. Yakovlev, O. I. Kovaleva, and S. D. Sher. *Zapiski Vsesoyuz. Mineralog. Obshchestva* 84, [illegible] (1955).—The contacts of a quartz diorite which is relatively high in K feldspar, with clayey, marly, and polymict sandy slates have the character of quartz-biotite-orthoclase hornfelses, in an aureole 10 to 15 m. in diameter. Pyrite and arsenopyrite, in lower degree sphalerite and galena, occur in these rocks in amts. of 2 to 3%. A very characteristic xenolithic structure is macroscopically described. The microscopic examn. shows all transitions from an original vein quartz to a wholly recrystd., mosaic-crystalloblastic hornfels with typical replacement pseudomorphs of pyrrhotite after pyrite and arsenopyrite. Biotite and hematite are typical contact-metamorphic recrystn. products; a radial-acicular zeolite (undetd., biaxial, neg.) also occurs. Cassiterite occurs in nodular aggregates up to 1 mm. in diam., also native Au, and galena (0.1 mm. in diam.) in which Sn was identified by spectral analysis. W. Bitel

SHER, S.D.

Lower Paleozoic deposits in the central part of the Baikal mountainous region. Biul.MOIP.Otd.geol. 32 no.1:61-74 Ja-F '57. (10:5)

(Baikal region--Geology, Stratigraphic)

BORODAYEVSKIY, N.I.; SHER, S.D.

Metasomatic rocks in the Melent'evskoye deposit in the Urals. (MIRA 12:1)
Zap. vses. min. ob-va 87 no.5:603-607 '58.
(Ural Mountains--Metasomatism)

SHER, S.D.

Concerning the geology of the basin of the middle Mama River (The Northern Baikal Highland). Sov.geol. 4 no.6:124-129 Je '61.

1. TSentral'nyy nauchno-issledovatel'skiy gorno-razvedochnyy institut tsvetnykh, redkikh i blagorodnykh metallov.
(Mama Valley--Geology, Stratigraphic)

SHER, S.D.; DEMCHENKO, A.V.

Importance of the study of the form of pyrite metacrystals for gold prospecting in the Lena Valley. Geol.rud.mestorozh. no.4:84-96 Jl-Ag '62. (MIRA 15:8)

1. TSentral'nyy nauchno-issledovatel'skiy gorno-razvedochnyy institut tsvetnykh, redkikh i blagorodnykh metallov, Moskva.
(Lena Valley--Gold ores) (Lena Valley--Pyrites)

SHER, S.D.

Correlation of the scales of indigenous and placer gold potentials in various gold-bearing provinces of the world. Sov. geol. 8 no.3: 3-9 '65. (MIRA 18:5)

1. TSentral'nyy nauchno-issledovatel'skiy gorno-razvedochnyy institut.

SHER, S.D.

Quantitative evaluation of mineralization in geotectonic provinces as revealed by a study of gold. Sov.geol. 8 no.11:137-143 N '65. (MIRA 19:1)

1. TSentral'nyy nauchno-issledovatel'skiy gorno-razvedochnyy institut tsvetnykh, redkikh i blagorodnykh metallov.

SHER, S.Yu., red.; PETROVA, V.V., red. izd-va; SHERSTNEVA, N.V., tekhn. red.

[Collection no. 9 of standard district estimates for construction work; indoor water supply, sewerage, heating and ventilation]Sbornik no. 9 edinykh raionnykh edinichnykh rastsenok na stroitel'nye raboty; vnutrennie vodoprovod, kanalizatsiia, otoplenie i ventiliatsiia. Moskva, Gosstroiizdat. Pt.3. [Indoor water supply and sewerage]Vnutrennie vodoprovod i kanalizatsiia. Izd.4., ispr. i dop. 1962. 251 p. (MIRA 15:8)

1. Russia (1923- U.S.S.R.)Gosudarstvennyy komitet po delam stroitel'stva.

(Plumbing--Estimates)

SHER, S.Yu., spets. red.; KLIMOVA, G.D., red.izd-va; SHEVCHENKO, T.N., tekhn. red.

[Collection no.9 of standard district estimates for construction work; interior; water pipes, sewerage, heating, and ventilation] Sbornik No.9 edinykh raionnykh edinichnykh rastsenok na stroitel'nye raboty; vnutrennie: vodoprovod, kanalizatsiia, otoplenie i ventiliatsiia. Moskva, Gosstroiizdat. Pt.1. [Heating] Otoplenie. Izd.4., ispr. i dop. 1963. 468 p. (MIRA 17:2)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.

SHER, S.Yu., spets. red.

[Collection No.9 of standard district estimates for construction work; indoor water supply, sewerage, heating, and ventilation] Sbornik No.9 edinykh raionnykh edinichnykh rastsenok na stroitel'nye raboty; vnutrennie vodoprovod, kanalizatsiia, otoplenie i ventiliatsiia. Moskva, Stroiizdat. Pt.2. [Ventilation] Ventiliatsiia. Izd.4., ispr. i dop. 1964. 743 p. (MIRA 17:6)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.

GUBINA, A.A.; ZAKGEYM, Ye.N.; ZUSMANOVICH, V.M.; IVANOV, K.N.; LISITSYN, S.N.; MOZGOV, A.Ya.; PAVLOV, A.S.; PISKORSKIY, B.N.[deceased]; USHOMIRSKAYA, A.I.; FINKEL'SHTEYN, S.M.; CHISTOVSKIY, V.B.; SHER, S.Yu.; ADAMOV, O.V., nauchn. red.; BEYZERMAN, A.N., nauchn. red.; ZHIVOV, M.S., nauchn. red.; POGORELYY, P.P., nauchn. red.; STAROVEROV, I.G., nauchn. red.; STESHENKO, A.L., nauchn. red.; TSEYTLIN, M.M., nauchn. red.; KOKHANENKO, N.A., inzh., red.; VOLNYANSKIY, A.K., glav. red.

[Assembling interior sanitary equipment] Montazh vnutrennikh sanitarno-tekhnicheskikh ustroistv. Moskva, Stroiizdat, 1964. 725 p. (MIRA 17:8)

MOKAKHOV, N.I., inzh.; DUBINSKIY, A.M., red.; SHEN, S.Yu., red.

[Price list no.1 of the average district estimated prices of materials, wares, and elements] TSennik No.1 srednikh raionnykh smetnykh tsen na materialy, izdeliia i konstruktsii. Moskva, Stroiizdat, Pt.3. 1965. 191 p. (MIRA 18:5)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam stroitel'stva.

USSR/Pharmacology. Toxicology. Chemotherapeutic Preparations. Anti-Tuberculous Remedies. V

Abs Jour: Ref. Zhur- Biol., No 22, 1958, 102921

Author : Finkel'shteyn, L. M.; Sher, T. M.

Inst : Institute of Tuberculosis, LitSSR

Title : On the Problem of Laboratory and Clinical Streptomycin-Resistance in Combined Treatment with Streptomycin and PAS of Patients with Pulmonary Tuberculosis

Orig Pub: Sb. nauchn. tr. Resp. n.-i. tuberkulezn. in-t, LitSSR, 1956, 2, 93-104

Abstract: Species of mycobacteria tuberculosis originally resistant to streptomycin (I) were not discovered. The degree of resistance depends on the amount of introduced I. In accordance with the increase of the amount of I, the frequency and degree of

Card 1/2

AID P - 5020

Subject : USSR/Electronics

Card 1/1 Pub. 89 - 5/14

Author : Korol'kov, V. and V. Sher

Title : Dictaphones

Periodical : Radio, #9, 29-31, S 1956

Abstract : The authors give a detailed description of the structure and principles of operation of a few types of apparatus for magnetic recording and reproducing of sound. Four drawings.

Institution : None

Submitted : No date

06415

6(5) SOV/107-59-5-10/51

AUTHOR: Sher, V., Chief Engineer

TITLE: Stereophonic Recording

PERIODICAL: Radio, 1959, Nr 5, p 9 (USSR)

ABSTRACT: In the USSR, the first experiments with stereophonic recording were begun in 1957. The first experiments were conducted with the two-channel system, where both channels are recorded separately. The equipment for stereophonic recording had been designed by the Gosudarstvennyy Dom Radioveshchaniya i zvukozapisi - GDRZ - (State House of Broadcasting and Sound Recording) and was manufactured by the experimental plant of the Gosudarstvennyy komitet po radioveshchaniyu i televideniyu (State Committee for Broadcasting and Television). By order of the GDRZ a small amount of stationary stereophonic tape recorders were manufactured by the aforementioned experimental plant. The Nauchno-issledovatel'skiy institut radioveshchatel'nogo priyema i akustiki -

Card 1/3

06415
SOV/107-59-5-10/51

Stereophonic Recording

IRPA - (Scientific Research Institute of Broadcasting Reception and Acoustics) developed studio equipment consisting of stereophonic tape recorders and loudspeaker units for reproduction. This equipment has been installed in a special studio and recording work has begun. The tape recorder may be used for two-channel recording as well as for compatible recording. The latter facilitates the reproduction on any one-channel tape recorder as well. The stereophonic tape recorder MEZ-41 was especially developed for this purpose. It uses tape of 6.35 mm width. The tape recorder reproduces audio frequencies ranging from 30-15,000 cps at a tape speed of 38.1 cm/sec and 40-12,000 at 19.05 cm/sec. For the first speed, the nonlinear distortion factor does not exceed 2.8% at a noise level of not more than 55 db. At the second speed the nonlinear distortion factor does not exceed 3% and the noise level is not higher than 53 db.

Card 2/3

SHER, V.; SHUGAR, D.

Chemical and enzymatic properties of methyl esters of 5'-phosphates of some pyrimidine nucleosides. Biokhimiia 26 no.5:840-845 S-O '61. (MIRA 14:12)

1. Institute of Biochemistry and Biophysics, Academy of Sciences, Warsaw.

(NUCLEOSIDES) (PHOSPHATES)

USSR / Acoustics. Electroacoustics and Engineering Acoustics. J-6

Abs Jour : Ref Zhur - Fizika No 3, 1957, No 7522

Author : Korol'kov, V., Sher, V.
Title : Dictating Machines

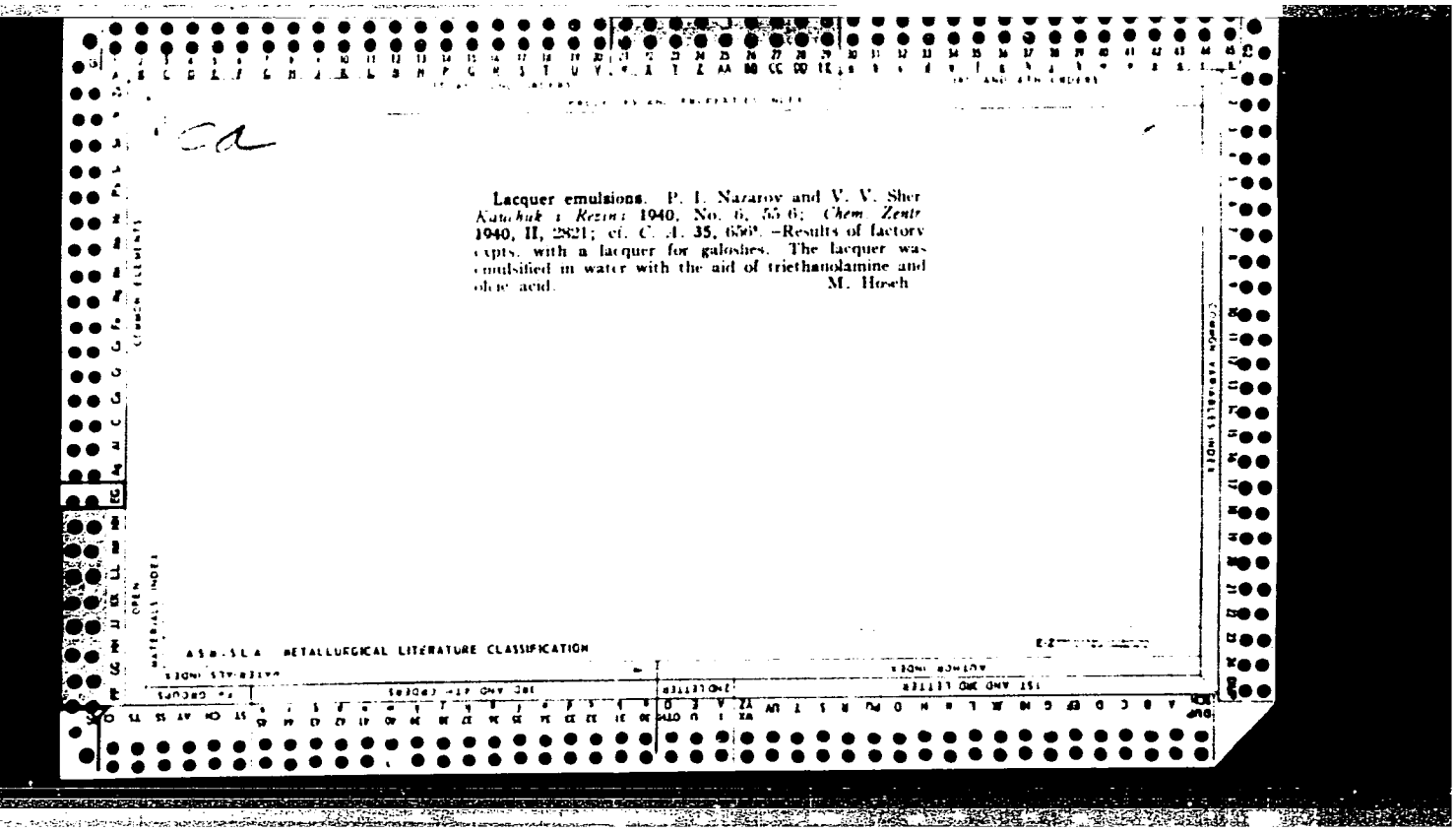
Orig Pub : Radio, 1956, No 9, 29-31

Abstract : Popular article.

Card : 1/1 - 80 -

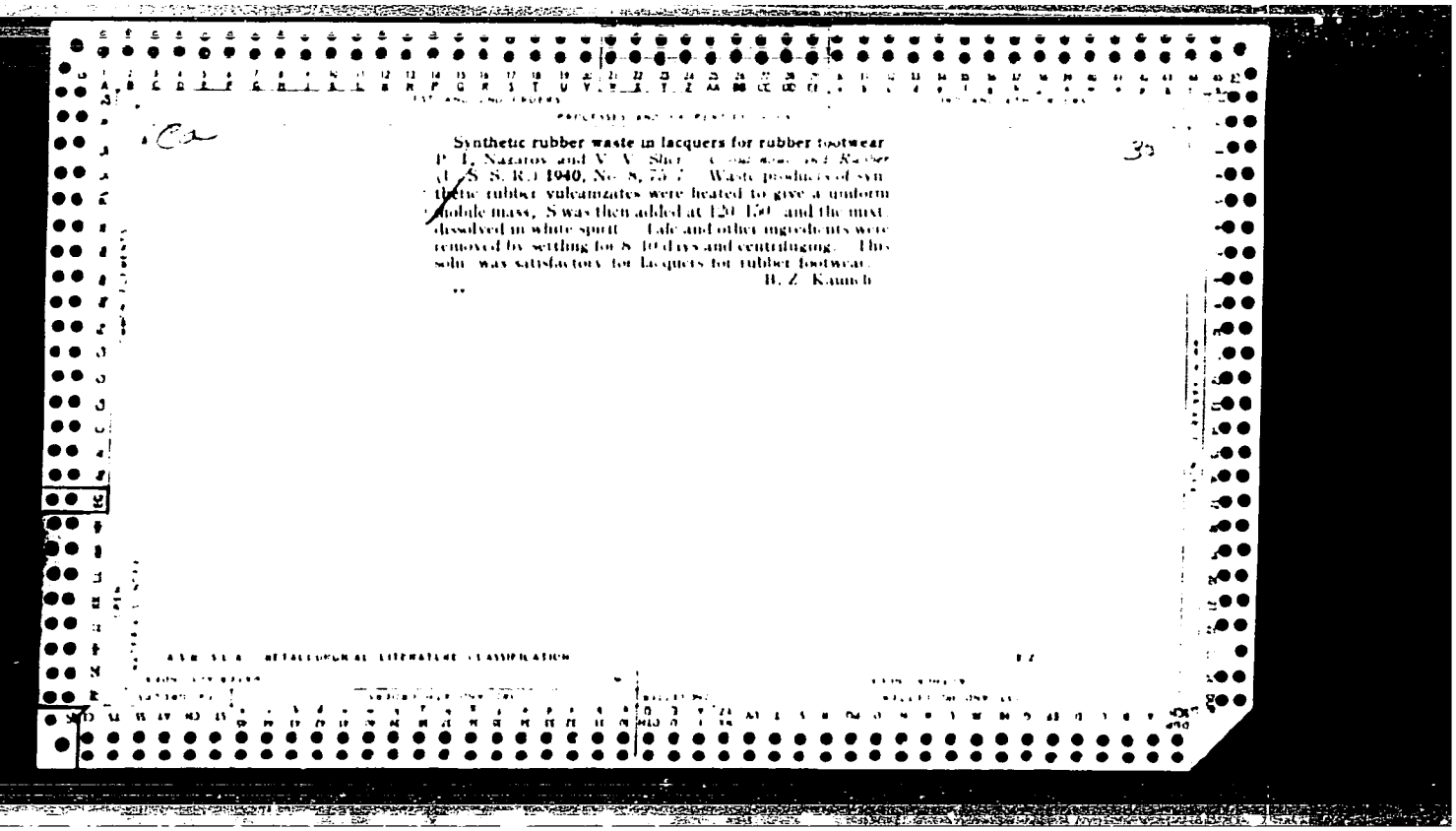
MEYERZON, Boris Yakovlevich; SHER, V.D., red.

[Advice on sound recording] Sovety po zvukopisi. Gos. kom-t Soveta ministrov SSSR po radioveshchaniiu i televideniiu, 1963. 30 p. (MIRA 17:8)



Lacquer emulsions. P. I. Nazarov and V. V. Sher *Kauchuk i Rezina* 1940, No. 6, 55-6; *Chem. Zentr.* 1940, II, 2821; cf. C. A. 35, 659⁹. —Results of factory expts. with a lacquer for galoshes. The lacquer was emulsified in water with the aid of triethanolamine and oleic acid. M. Hosch

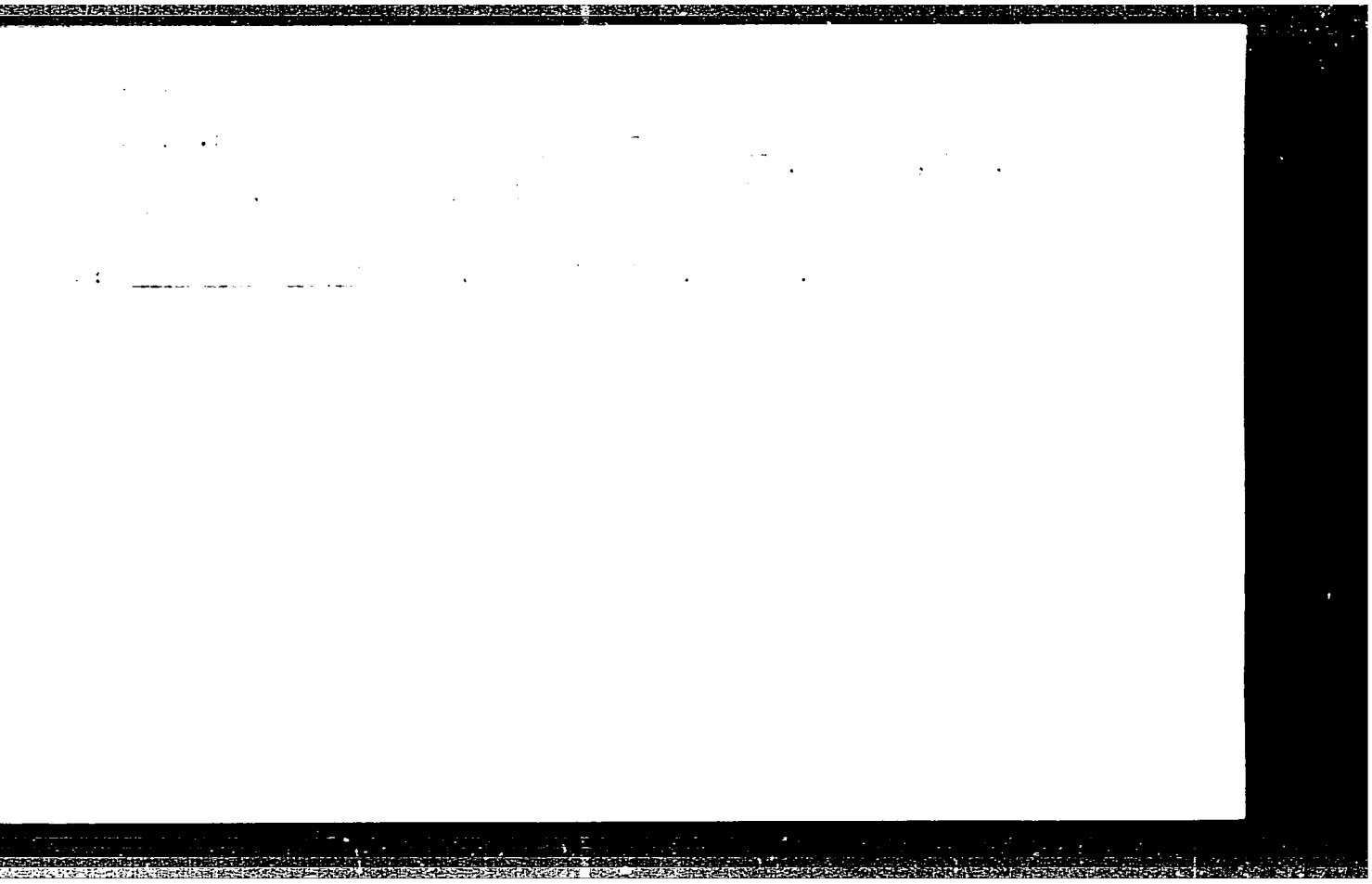
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Synthetic rubber waste in lacquers for rubber footwear

P. I. Nazarov and V. V. Shor [illegible] *Kauchuk* (U.S.S.R.) **1940**, No. 8, 75-7. Waste products of synthetic rubber vulcanizates were heated to give a uniform pebble mass, S was then added at 120-150° and the mixt. dissolved in white spirit. Talc and other ingredients were removed by settling for 8-10 days and centrifuging. This soln. was satisfactory for lacquers for rubber footwear.

B. Z. Kaunch



APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549110014-5"

SANIN, P.I.; UL'YANOVA, A.V.; SHER, V.V.

Chemical structure of surface-active substances (depressing agents) which increase the fluidity of lubricating oils at low temperatures. Khim.i tekh.topl.ne.8:54-58 Ag '56. (MLRA 9:10)

1.Institut nefti Akademii nauk SSSR.
(Lubrication and lubricants) (Surface--Active agents)

SHER, V. V.

4

4E3d-1 } 2
4E4y-1 }

Chemical structure of alkyl phenols and their activity as pour-point depressants. P. I. Sanin and V. V. Sher. *Trudy Inst. Nefti, Akad. Nauk S.S.S.R.* 8, 180–4(1958); cf. *C.A.* 50, 11055i.—Since alkyl phenols condensed with chlorinated phenols in the presence of $AlCl_3$ are very active pour-point depressants and their structure is not known eighteen pure alkyl phenols were synthesized. The alkyl chain structure was found to be important for the depressant effect, and the normal structure was found to be preferable to a branched structure. An *o*-(octadecyl)phenol was more active than the corresponding para isomer but the m.p. of these compds. is high and their soly. in oil too low for being useful. Their soly. was improved by the addn. of branched alkyl groups (obtained by condensation with chlorinated polyisobutene). *tert*-Octadecyl phenols contg. tertiary C atoms in the chain directly linked to the phenol ring, with a long C chain forming the rest of the alkyl, were good depressants. Increasing the no. of alkyl chains improved the depressant effect. A table of 18 alkyl phenols is given listing m.p. or b.p. and depressant efficiency. W. M. Sternberg

Sher, V. V.

Synthesis of some organophosphorus compounds and a study of their effect on properties of mineral oils. P. I. Sanin and V. V. Sher. *Proc. Acad. Sci. U.S.S.R., Sect., Chem.* 107, 181-3(1956)(Engl. translation).—See *C.A.* 50, 14514*b*. B. M. R.

USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 959

Author: Sanin, P. I., and Sher, V. V.

Institution: Academy of Sciences USSR

Title: Synthesis of Some Organophosphorus Compounds and Investigation of Their Effect on the Properties of Mineral Oils

Original Periodical: Dokl. AN SSSR, 1956, Vol 107, No 4, 551-553

Abstract: The Ba- and Ni-salts of $(RO)_2PSSH$ acids (I), disulfides of the type $[(RO)_2PSS]_2$ (II), and $[(C_{18}H_{37}O)_2PO]_2Ba$ (III) have been synthesized and their effect on the properties of mineral oils has been investigated. The following I have been prepared (R, bp in ° C/mm, n_D^{20} and d_4^{20} are indicated in that order): n-C_4H_9, 121.0-122/2.5, 1.4940, 1.0689; iso-C_5H_{11}, 147.0-148.0/2.5, 1.4887, 1.0354. For I (R = n-C_8H_{17}), mp 79.5-80.5°. The substance, R, mp in ° C, the effect on film formation on the piston of a PZV [compressed air?] engine in scale divisions, and on the corrosion of a Pb-strip in gms/m^2 are

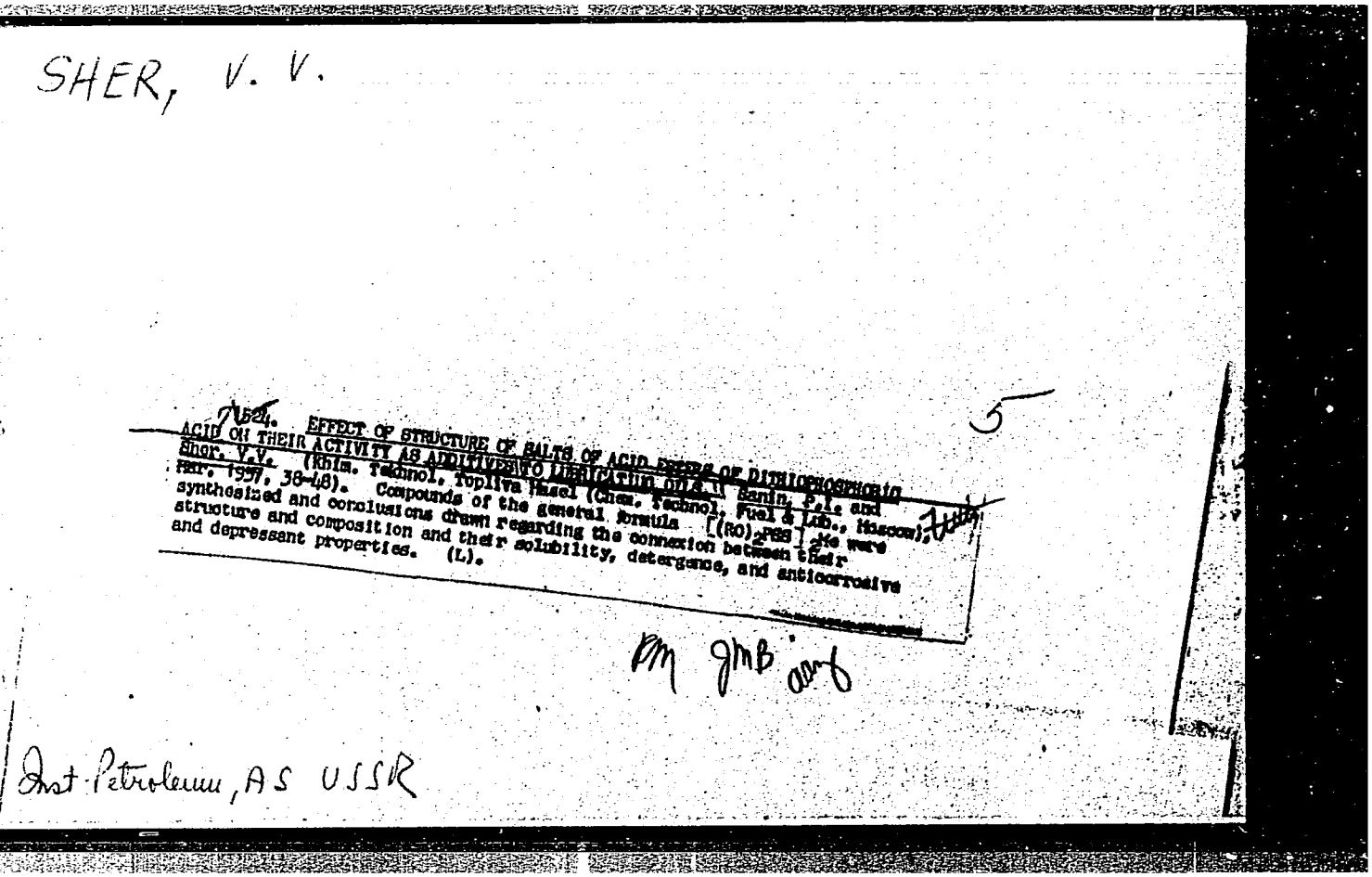
Card 1/2

USSR/Organic Chemistry - Synthetic Organic Chemistry, E-2

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 959

Abstract: given: for mineral oils without additives, 4.5 divisions, corrosion 46.0 gms/m^2; for I, Ba-salts: C_4H_9, 130.0-138.0, 4.5, 33.6; C_5H_{11}, 179.0-180.0, 4.5, 41.8; $C_{10}H_{21}$, --, 1.5, 0.9; $C_{18}H_{37}$, 99.0-100.0, 1.0, 1.7; $C_7H_{15}(C_9H_{19})CHCH_2$, --, 1.5, 3.1; Ni-salts: C_4H_9, 16.0-16.5, 3.5, 5.6; C_5H_{11}, 23.5-24.5, 3.5, 6.4; $C_{10}H_{21}$, 20.0-21.0, 1.5, 11.0; $C_{18}H_{37}$, 50.5-51.5, 0.5, 3.6; for the K-salts: $C_{18}H_{37}$, 165.0-167.0, 1.0, 50.0; for II: C_4H_9, --, 5.0, 97.1; $C_{18}H_{37}$, 39.0-40.0, 4.0, 4.3; for III: --, 200, 0.5, 127.7. The Ba-salts of I are prepared from $Ba(OH)_2$ and I, and the Ni-salts are obtained from the K-salts of I and $NiSO_4$; II is prepared by the oxidation of I with iodine in alkaline medium. The basic anticorrosion agent in I is the sulfur; I with long normal-chain radicals are very effective depressors.

Card 2/2



SHER, V. V.

7624. EFFECT OF STRUCTURE OF SALTS OF ACID ESTERS OF DITHIOPHOSPHORIC ACID ON THEIR ACTIVITY AS ADDITIVES TO LUBRICATING OILS. Sanin, P.I. and Sher, V.V. (Khim. Tekhnol. Topliva Masel (Chem. Techno). Fuel & Lub., Moscow), Mar. 1957, 38-48). Compounds of the general formula $[(RO)_2PSS]_2Me$ were synthesized and conclusions drawn regarding the connexion between their structure and composition and their solubility, detergence, and anticorrosive and depressant properties. (L).

5

Inst Petroleum, AS USSR

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of Natural Gases and Petroleum. Motor and Jet Fuels. Lubricants. I-8

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2599

Author : Sanin, P.I., Shepeleva, Ye.S., Sher, V.V., Ul'yanova, A.V.

Inst : Academy of Sciences USSR

Title : Use of Organophosphorus Compounds to Enhance the Quality of Lubricating Oils.

Orig Pub : Sb.: Khimiya i primeneniye fosfororgan. soyedineniy. M., AN SSSR, 1957, 112-123

Abstract : Description of the results of investigations of the effects of different organophosphorus compounds on the wear-reducing, detergent and anticorrosion characteristics of oil. It was found that lower trialkyl-trithiophosphites and trialkyl thiophosphates, containing C_3-C_5 alkyls, improve the

Card 1/4

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of Natural Gases and Petroleum. Motor and Jet Fuels. Lubricants. I-8

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2599

lubricating properties of oil to a greater extent than additives of this type containing long hydrocarbon radicals (for example, n-trioctadecyl trithiophosphate); trialkyl thiophosphates are less active than the trialkyl trithiophosphites. The presence of phosphorus in the molecule of additives of this type, affects, first of all, their capacity of increasing the critical load of the oil, while the presence of sulfur -- the capacity of improving the breaking-in of metal surfaces subjected to friction. It was ascertained that esters of chloromethyl- and beta-chlorethyl phosphinic and thiophosphinic acids, approximate, as wear-reducing additives, the most active thiophosphites and thiophosphates; the action of chlorine in compounds of this type is analogous to the effect of sulfur on the activity of thiophosphites and thiophosphates. The

Card 2/4

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549110014

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of Natural Gases and Petroleum. Motor and Jet Fuels. Lubricants. I-8

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2599

the aforesaid type, is the sulfur. In addition, the dialkyl dithiophosphates improve the fluidity of mineral oils at low temperatures.

Card 4/4

SOV/65-58-8-5/14

AUTHORS: Sanin, P. I; Sher, V. V. and Nikitskaya, Ye. A.

TITLE: Metal Dialkyl Dithiophosphates as Complex Additives to Lubricating Oils. (Dialkilditiofosfaty metallov kak kompleksnyye prisadki k smazochnym maslam).

PERIODICAL: Khimiya i Tekhnologiya Topliv i Masel, 1958, Nr.8. pp. 24 - 28. (USSR).

ABSTRACT: In early articles it was shown that metal dialkyl dithiophosphates are active complex additives (Ref.1 - 2). Dialkyl dithiophosphates of various metals have varying effect on the detersive and corrosion properties of oils. Tests were carried out on two types of oil: the oil MS-20 (from the Emba Region) and the oil MX-22 (from the Baku Region). Properties of these oils are given. From Table 1 it can be seen that these additives show varying degrees of activity. The most active additive was the barium dialkyl dithiophosphate DF-1 when added to the oil MS-20. This additive contained about 4% P, 9% S, and 8% barium, and was used in the form of a 50% solution in spindle oil AU. The action of this additive on the characteristics of various oils was investigated under laboratory conditions. Table 3: the dependence of the corrosion of oils on the concentration of DF-1. Results of this

Card 1/2

Metal Dialkyl Dithiophosphates as Complex Additives to Lubricating Oils.

investigation indicate that the optimum concentration of the additive DF-1 is about 3%. Other tests concerned the effect of the additive on the oil MS-20 with regard to its stability to oxidation (GOST 4953-49), and its tendency to lacquer formation (GOST 6049-51) (Table 4). The acid number of the samples containing the additive, after testing in the device PZV, were considerably lower than for oils not containing the additive (Table 5). Practical experiments were carried out on the one-cylinder engine IT-9-3 (devised by VNII NP) under the supervision of V. F. Filippova. Results of these tests are given in Table 6. Table 7: the effect of the additive on the solidification point of the oils; Table 8: the effect of complex additives on some properties of the oil MS-20 (containing 3% of the additive). There are 8 Tables and 4 Soviet References.

ASSOCIATION: Institut nefti AN SSSR. (Petroleum Institute, AS USSR).

1. Lubricant additives--Effectiveness 2. Phosphates--Applications
3. Lubricating oils--Test results

[redacted], [redacted], [redacted], [redacted], A. I.

"[redacted]tic Additives for Lubricating Oils. Influence of Additive Structure on Their Activity."

[redacted] to be
[redacted]rt submitted at the Fifth World Petroleum Congress, 30 May - [redacted] June 1959, New York.

S/081/62/000/005/090/112
B162/B101

AUTHORS: Sanin, P. I., Sher, V. V., Vipper, A. B., Glukhoded, I. S., Nikitskaya, Ye. A.

TITLE: Investigation of additives of the type of metal dialkyl dithiophosphates

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 5, 1962, 530, abstract 5M230 (Sb. "Prisadki k maslam i toplivam", M., Gostoptekhizdat, 1961, 26-34)

TEXT: As a result of the synthesis and investigation of a series of technical additives of the type of dialkyl dithiophosphates (DP) of Ba and Zn, it is established that these additives have washing, anticorrosion, and antiwear properties, are antioxidants and some of them depressors and de-emulsifiers. Certain properties of DP as additives to lubricating oils appear in different degrees and depend on the structure of the additives. The properties of the additives which depend on their surface activity (washing and de-emulsifying action, partly anticorrosion action, drop in

Card 1/2

solidification point) are in agreement with their adsorption characteristic and appear to the greatest extent in the high-molecular DP of barium. Other properties (antiwear) are more strongly marked in the comparatively low-molecular DP of metals. The greatest practical interest is offered by the additive DP-1 with washing, anticorrosion, and de-emulsifying properties, and the additive DP-11 which is characterized by antiwear properties. Abstracter's note: Complete translation.

Card 2/2

36934
S/081/62/000/007/026/033
B168/B101

AUTHORS: Sanin, P. I., Sher, V. V., Chernyavskaya, L. F., Melent'yeva, N. V., Glukhoded, I. S.

TITLE: Dialkyldithiophosphates of metals as anti-oxidants for lubricating oils

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 7, 1962, 548, abstract 7M164 (Sb. "Prisadki k maslam i toplivam". M., Gostoptekhizdat, 1961, 85-94)

TEXT: The influence of dialkyldithiophosphates of metals of different structures (in the form of industrial additives ДФ-1 (DF-1), ДФ-2 (DF-2), ДФ-5 (DF-5), ДФ-8 (DF-8), ДФ-9 (DF-9), ДФ-10 (DF-10), ДФ-11 (DF-11), and ДФ-12 (DF-12)) on the oxidation of oil АС-8 (DS-8) (from sulfur-containing petroleums) and its hydrocarbon fractions, separated chromatographically, was investigated. Oxidation of the oil was determined from oxygen absorption in a closed system. The anti-oxidant action of the dialkyldithiophosphates in the paraffin-naphthene fraction was considerable at test temperatures of 120-150°C; it depended on the structure of the

Card 1/2

Dialkyldithiophosphates of ...

additive and falling as the temperature rose, to reach a negligible value at 200°C. The additive DF-1 (barium dialkyldithiophosphate with the alkyls C_{20}-C_{24}) was found to be the most powerful anti-oxidant, having an effectiveness roughly equal to that of ionol. In the paraffin-naphthene fraction the additives of sulfonate type (азнии-4 (aznii-4) washing component of азнии-5 (aznii-5) and ПМС$_Я$ (PMS$_{Ya}$)) and of alkylphenolate type (внии нп-350 (vnii np-350)) did not greatly reduce the rate of oxidation. Much more active in the same fraction of oil were the additives of alkylphenolate type, which also contain sulfur or phosphorus in the form of sulfides and dithiophosphates (циатим-339 (tsiatim-339), Паранокс-56А (Paranox-56A), Внии нп-360 (vnii np-360), Внии нп-361 (vnii np-361), ИП-22к (IP-22k), although their effectiveness was lower than that of additive DF-1. The additive DF-1 did not reduce the rate of oxidation of oil DS-8, which contains natural inhibitors and is sufficiently stable without additives. The oil becomes unstable in the presence of metals (Cu, Fe and CuO), when the natural inhibitors are not sufficiently effective. The inhibitor DF-1 passivated the metals and raised the stability of the oil to approximately the same value as in the absence of metals.
[Abstracter's note: Complete translation.]
Card 2/2

S/081/62/000/014/025/039
B166/B144

AUTHORS: Sanin, P. I., Chernyavskaya, L. F., Sher, V. V., Melent'yeva, N. V.

TITLE: On the mechanism of the detergent action of additives

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 14, 1962, 536, abstract 14M237 (Sb. "Prisadki k maslam i toplivam." M., Gostoptekhizdat, 1961, 174 - 184)

TEXT: The action of dialkyl-dithio phosphates of Ni ((I) di-n-butyl-, di-n-decyl- and di-n-octadecyl thiophosphate) as model detergent additives to motor oils was studied. Surface tension isotherms were taken of solutions of (I) in benzene and heptane on the solvent - water interface; also adsorption isotherms of (I) on carbon black suspended in toluene. These isotherms show that I are surfactants and are adsorbed both on the hydrocarbon - water interface and on the surface of carbon black. Comparison of electron microscope photographs (magnification x 15,700) of carbon black collected from its suspensions in toluene with and without (I) shows that (I) prevent agglutination of particles of carbon black,

Card 1/3

On the mechanism of the...

or that they separate large carbon black aggregates which have already agglutinated. The maximum number of molecules of I adsorbed by one particle of thermal black or channel black is calculated from the average diameter of the particles of carbon black in suspension, determined from the photograph (720 Å for thermal black and 306 Å for channel black), and from the maximum quantity of adsorbed (I); the following respective values being obtained: $47.7 \cdot 10^7$ and $10.2 \cdot 10^4$ molecules for di-n-butyl-dithio phosphate, $20.5 \cdot 10^7$ and $7.3 \cdot 10^4$ molecules for di-n-decyl-dithio phosphate, $17.5 \cdot 10^7$ and $5.7 \cdot 10^4$ molecules for di-n-dioctadecyl-dithio phosphate. The stabilization of a suspension of carbon black in t[illegible] in the presence of (I) was studied by determining the full sedimentation time of the carbon black when at rest, or by centrifuging and determining the change in the concentration of carbon black in suspension with time. It was found that (I) have a considerable stabilizing effect even at a concentration of 0.1%, whereas the disulphide $[(C_{18}H_{37}O)_2P(S)S-]_2$, which has a similar structure, produces almost none of this effect and it parts

Card 2/3

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S/065/61/000/011/002/004
E030/E135

AUTHORS: Sanin, P.I., Vipper, A.B., Sher, V.V., and Kleymenova, Z.A.

TITLE: Investigation of the simultaneous effect of additives of sulphonates and dialkyldithiophosphate metals

PERIODICAL: Khimiya i tekhnologiya topliv i masel, no.11, 1961, 19-23

TEXT: The effects have been studied of adding simultaneously thiophosphate and sulphonate additives to oils for high-speed engines. The base oil studied was ДС-8 (DS-8), which contains 86% distillate and 14% residue from high-sulphur crudes. The additives were the following dialkyldithiophosphates: ДФ-I (DF-I) which is a barium salt derived from high-molecular weight alcohols (C_{20} - C_{24}), and ДФ-II (DF-II) which is a zinc salt derived from isobutyl and isooctyl alcohols; and the following sulphonates: АзНИИ-5 (AzNII-5) a barium salt of sulphonated petrolatum, and СБ-3 (SB-3) a barium salt of the acid obtained by sulphonating selectively refined diesel oil. The base oil properties were studied and measurements repeated on addition of

Card 1/3

Investigation of the simultaneous ....

each additive individually (AzNII-5 up to 3%, SB-3 up to 10%, and the DF- additives up to 3.5) and then, on addition of each of the sulphonates along with each of the dithiophosphates. Tests were carried out (results being quoted on Soviet test methods) on: thermal oxidation stability (as minutes at T_{250}), detergency in "units" on apparatus 7-38 (PZV), de-emulsifying power (in % of unseparated emulsion), corrosivity (g/m^2 on apparatus DK-2 (DK-2), and critical load (P_K, kg). It was found that addition of 1-2% dithiophosphate additive along with 3% sulphonate additive gave much better improvement than even 10% of sulphonate alone. It was found that DF-I was more effective than DF-II in all respects except anti-wear; the optimum concentration of DF-I is 1% but for anti-wear, DF-II is necessary, the optimum being 2%. All these results refer to addition with sulphonates.
A detailed analysis was made of oxidation, adsorbing the tested oils in silica gel and desorbing in benzyl alcohol. SB-3 inhibited formation of carbenes and carboids, but AzNII-5 is a pro oxidant, favouring combination of resins with oxy-acids; in their presence both DF- additives were strong anti-oxidants,

Card 2/3

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25703
S/020/61/139/002/[illegible]/017
B103/B220

AUTHORS: Sanin, P. I., Sher, V. V., Chernyavskaya, L. E., and Melent'yeva, N. V.

TITLE: Antioxidants of the type of dialkyl dithio phosphates of metals

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 139, no. 2, 1961, [illegible]-395

TEXT: In continuation of their previous papers (P. I. Sanin, V. V. Sher, Ref. 1: DAN 107, no. 4, 55[illegible] (1956); and P. I. Sanin, V. V. Sher, Ref. [illegible]: Khim. i tekhnol. topliv i masel, [illegible] 18 (1956)) the authors [illegible] the results of their studies regarding dialkyl dithiophosphates (DF) of metals as antioxidants of hydrocarbons in lubricating oils. The [illegible] oxidizing activity of DF of metals of different structures was studied and the influence of certain [illegible] on the oxidation process in the presence of these additions was shown. [illegible] the structure of the synthetic additions. The additions DF-[illegible], DF-[illegible], and DF-12 are barium dialkyl dithio phosphates, while the others are zinc dialkyl dithiophosphates. [illegible] molecular [illegible] produced by direct oxidation of the paraffin [illegible] fraction

Card 1/6

S/[illegible]/139/00[illegible]/017
B[illegible]

Antioxidants of the type of dialkyl [illegible]

350-540°C were used to obtain DP-[illegible] and DP-[illegible]. Alcohols produced by oxidation of the paraffin fraction 270-350°C were used to obtain DP-[illegible]. The molecular weight of the alcohols corresponded to [illegible], [illegible] and [illegible]. DP-8 was then [illegible] based on [illegible] alcohol [illegible]tanol-2 [illegible]. [illegible]tions DP-9 and DP-12 based on the [illegible] alcohol, 2-ethyl [illegible]. DP-10 as well as DP-[illegible] were produced from two alcohols and contained, thus, radicals of different [illegible] [illegible] hydro[illegible] the [illegible] were oxidized [illegible] distillation of [illegible] containing naphth[illegible] by [illegible]aphy. The oxidation of the hydrocarbons was determined [illegible] absorption of oxygen in the closed system. All DP [illegible] more or less the oxidation rate of the hydrocarbons, thus, they can be [illegible] typical antioxidants. The activity of the antioxidants [illegible], however, dependent on the structure of the hydrocarbon radicals and the [illegible] of the [illegible]. Barium DP containing secondary hydrocarbon radicals [illegible] the most active ones. Fig. 1 shows results of the oxidation of paraffin naphthene hydrocarbons at different temperatures in the presence of DP-[illegible] (high-molecular barium DP). The DP antioxidants show their highest activity at temperatures up to 150°C.

Card 2/6

Antioxidants of the type of dialkyl

At transition to higher temperatures the activity of the antioxidants is reduced, probably due to thermal decomposition. The optimum concentrations of various additions amounted to 0.75 2.5% at the conditions mentioned. The oil where-from unstable paraffin naphthene hydrocarbons were isolated, contained also monocyclic and bicyclic aromatic hydrocarbons and sulfur compounds. Certain aromatic hydrocarbons are natural antioxidants for the unstable oil hydrocarbons. Therefore, the oil itself is highly stable. The natural inhibitors contained in the oil paralyze the action of synthetic DP antioxidants. In these circumstances, the effect of the latter on the oxidation process of the oil itself is negligible. It should be borne in mind that metals and their oxides (Fe_2O_3, PbO) represent catalysts for the oxidation of hydrocarbons. It is proved that the oil becomes highly stable in the presence of metals, although it contains natural inhibitors. The catalytic action of metals can be reduced or eliminated by the use of DP of metals. The addition of DP's intended to stabilize the oil in the presence of metals. Apparently DP is adsorbed as a thin film on the metallic surface and shields, thus a direct stabilizing effect on the stability of the oil or indirect of the latter by antioxidants. [Abstractor's note: Essentially as in the translation.] There are

Card 3/3

25(1)
S/020/6[illegible]
B104/B102

Additions of the type of dialkyl [illegible]

[illegible] figure, 1 table, and a bibliography [illegible]

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences USSR)

PRESENTED: February 8, 1960 by A. V. Topchiyev, Academician

SUBMITTED: February 7, 1960

Table 1. Structure of additions of the type of dialkyl dithio phosphate salts.
Legend: (1) denomination of the addition; (2) formula $AO\Phi=PDP$

Card 4/6

S/020/61/140/001/023/024
B130/B101

AUTHORS: Sanin,P. I., Chernyavskaya,L. F., Sher,V. V., and Melent'yeva,N. V.

TITLE: Synthetic dispergator-type additives

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 1, 1961, 176-178

TEXT: The washing effect of additives to lubricating oil is explained here by their adsorption on the insoluble particles of the oil suspension. Thus, dispersion and stabilization of the suspension are achieved. Most of the tests were made with polyfunctional additives of the Ni-dialkyl dithiophosphate type (I). $[(C_{18}H_{37}O)_2PSS]_2Ni$ has excellent washing properties, as shown by P. I. Sanin and V. V. Sher (Khimiya i tekhnologiya topliv i masel, no. 3, 38 (1957)). Carbon black suspended in toluene containing a certain quantity of (I) was used as a model suspension. The quantity of (I) adsorbed on carbon black was calculated indirectly by determining the quantity of (I) remaining dissolved, after adsorption equilibrium had been reached and the carbon black separated. The

Card 1/

Synthetic dispergator-type additives

difficulty of determining the slight additives in the dilute hydrocarbon solutions was overcome as follows: After toluene had been separated (I) was decomposed with a mixture of nitric and sulfuric acids, and the nickel was determined colorimetrically with dimethyl glyoxime. The results of adsorption of various (I) on carbon black are illustrated in Fig 1. The quantity of adsorbed (I) as a function of its equilibrium concentration is a typical adsorption isotherm. This also proves that (I) is actually adsorbed on carbon black. Electron micrographs of the carbon-black preparations show that about $6 \cdot 10^4$ molecules of Ni-di-n-octodecyl dithiophosphate were adsorbed on one particle of carbon black. Owing to the adsorption, the carbon-black particles are covered by a layer of (I) molecules oriented with their hydrocarbon group toward the oil medium. Consequently, the oleophily of the particles increases, and the suspension becomes more stable. The surface of the particles of different types of carbon black is inhomogeneous and more or less oxidized. The polar groups of (I) are adsorbed on carbon black owing to oxidation, and, consequently, the non-polar hydrocarbon groups are oriented toward the oil medium. The stabilization of the suspension was either studied

Card 2/4

Synthetic dispergator-type additives

by sedimentation or centrifugation the carbon black or determined by measuring the optical density of the carbon-black concentration as a function of time. There are 1 figure and 10 references: 6 Soviet and 4 non-Soviet. The two references to English-language publications read as follows: A. R. Badeley, A. H. Nimson, F. H. Garner, J. Inst. Petrol., 35, No. 305, 141 (1949); F. H. Garner, C. W. Nutta, M. F. Mohtadi, J. Inst. Petrol., 36, No. 317, 292 (1950); ibid. 39, no. 358, 677 (1953).

ASSOCIATION: Institut neftekhimicheskogo-sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis of the Academy of Sciences USSR)

PRESENTED: April 8, 1961, by A. V. Topchiyev, Academician

SUBMITTED: April 4, 1961

Fig. 1. Adsorption isotherms of Ni-dialkyl dithiophosphates on carbon black. Suspension of carbon black in toluene. The concentration of carbon black is 0.00061%. Legend: (1) Ni-di-n-octadecyl dithiophosphate;

43

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Konferentsiya po khimii i primeneniyu fosfororganicheskikh soyedineniy. 2d, Kazan', 1959

Khimiya i primeneniye fosfororganicheskikh soyedineniy; trudy (Chemistry and Use of Organophosphorus Compounds; Conference Transactions) Moscow, Izd-vo AN SSSR, 1962. 630 p. Errata slip inserted. 2800 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial.

Resp. Ed.: A. Ye. Arbuzov, Academician; Ed. of Publishing House: L. S. Povarov; Tech. Ed.: S. G. Tikhomirova.

PURPOSE: This collection of conference transactions is intended for chemists, process engineers, physiologists, pharmacists, physicians, veterinarians, and agricultural scientists.

COVERAGE: The transactions include the full texts of most of the scientific papers presented at the Second Conference on the Chemistry and Use of

Card 1/14

Organophosphorus Compounds held at Kazan' from 2 Nov through 1 Dec 1959. The material is divided into three sections: Chemistry, containing 67 articles; Physiological Activity of Organophosphorus Compounds, containing 26 articles; and Plant Protection, containing 12 articles. The reports reflect the strong interest of Soviet scientists in the chemistry and application of organophosphorus compounds. References accompany individual reports. Short summaries of some of the listed reports have been made and are given below.

TABLE OF CONTENTS [Abridged]:

SHEPELEVA, Ye.S.; SHER, V.V.

Collected works of the Scientific and Technical Conference on "Additives to lubricants and fuels." Reviewed by E.S.Shepeleva, V.V.Sher. Neftekhimiia 2 no.3:420-423 My-Je '62. (MIRA 15:8)
(Lubrication and lubricants--Additives)

SHER, V.V., GLUKHODED, I.S.

Teh application of Dialkyldithiophosphated in technique.

Khimiya i Primeneniye Fosfororganicheskikh Soyedinenly (Chemistry and application of organophosphorus compounds) A. YE. ARBUZOV, Ed. Publ. by Kazan Affil. Acad. Sci. USSR, Moscow 1962, 632 pp.

Collection of complete papers presented at the 1959 Kazan Conference on Chemistry of Organophosphorus Compounds.

SHER, V. V.

SHEPELEVA, YE.S., ULYANOVA, A.V., SHER, V.V., KLEYMENOV, B.V.,

Synthesis of friction wear-reducing additives and investigation of the mechanism governing their action

Report to be submitted for the Sixth World Petroleum Congress, Frnakfurt, 16-26 June 63

ACCESSION NR: AP4017576 S/0065/64/000/003/0062/0066

AUTHORS: Sanin, P.I.; Sher, V.V.; Chernyavskaya, L.F.; Melent'yeva, N.V.; Komissarova, N.I.

TITLE: Stability of oils containing antioxidant and additives of the sulfonate type.

SOURCE: Khimiya i tekhnol. topliv i masel, no. 3, 1964, 62-66

TOPIC TAGS: oil antioxidant, oil additive, oil, engine oil, lubricating oil

ABSTRACT: In view of the ever increasing use of sulfonate additives (which in themselves are not antioxidants but merely dispersers) to lubricating oils (of the DS-11 type), the authors undertook a study of additives and their combined action with different antioxidants. DS-11 is an oil selectively drawn from eastern, sulfur-rich crudes. Its paraffin-naphthene fraction has a molecular weight of 404, ρ_4^{20} = 0.8627, n_D^{20} = 1.4740, oil viscosity v_{50} = 66.8 cst; v_{100} = 11.35 cst. The additives studied were: (1) SB-3 (barium sulfonate) and antioxidants DF-1 (barium dialkyldithiophosphate),

1/2

Card

ACCESSION NR: AP4017576

(2) DF-11 (zinc dialkyldithiophosphate), (3) AN-22k (calcium dithiophosphate), (4) V-353 (free dialkylphenyldithiophosphoric acid), and (5) NG-183a (interaction product of terpenes and phosphoruspentasulfide neutralized with calcium oxide). Their stability was evaluated according to oxygen absorption in a closed system at 150C. It was found that the above antioxidants range according to decreasing activity: DF-11, DF-1, AN-22k, B-353, NG-183a. At great oxidation depth, only the first two increase oil stability. Orig. art. has: 4 figures.

ASSOCIATION: None

SUBMITTED: 00 DATE ACQ: 23Mar64 ENCL: 00

SUB CODE: CH, FL NR REF SOV: 001 OTHER: 000

Card 2/2

L 56027-65 EWT(m)/EPF(c)/T Pr-4 DJ
ACCESSION NR: AP5016842 UR/0204/65/005/003/0399/0405
547.26'118'122.1:66.094.382

AUTHOR: Sher, V.V.; Melent'yeva, N. V.; Nechitaylo, N. A.; Sanin, P. I.

TITLE: The effect of thermal conversion of metal dialkyl dithiophosphates on their effectiveness as hydrocarbon antioxidants

SOURCE: Neftekhimiya, v. 5, no. 3, 1965, 399-405

TOPIC TAGS: lubricant additive, antioxidant, metal dialkyl thiophosphate, oxidation inhibitor

ABSTRACT: Metal dialkyl dithiophosphates, particularly those of zinc, are antioxidants of hydrocarbons and find application as lubricant additives. Unlike other antioxidants, such as various phenols, metal dialkyl dithiophosphates not only inhibit the initiation of oxidation (extend the induction period), but also continue to inhibit the propagation steps of oxidation. Preliminary experiments had shown that the specific action of metal dialkyl dithiophosphates depends on the formation of secondary products. In the present work, the antioxidative effectiveness of several metal dialkyl dithiophosphates

Card 1/2

L 56027-65
ACCESSION NR: AP5016842

was examined as a function of their prior heat treatment. It was found that nickel di-n-decyl dithiophosphate acted most effectively as an antioxidant for a mixture of alkanes and cyclanes when the antioxidant had been kept for 5 hours at 180C under nitrogen. Similarly, zinc diisobutyl dithiophosphate was most effective as an antioxidant when prior heat treatment had been conducted at 225C; higher or lower temperatures decreased its effectiveness. Other compounds of this type exhibit similar behavior. Heating of the above compounds in air proved as effective as heating under nitrogen. It was concluded that metal dialkyl dithiophosphates are changed by heat treatment into substances which combine with oxidation products of hydrocarbons to form effective antioxidants. Orig. art. has: 4 figures. [VS]

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. B. Topchiyeva AN SSSR (Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 030ct64 ENCL: 00 SUB CODE: FP, IC

NO REF SOV: 006 OTHER: 004 ATD PRESS: 4032

Card 2/2

L 55930-65 EWT(m)/EPF(c)/EPF(n)-2/EWA(d)/EWP(j)/T/EWP(t)/EWP(b) Pc-4/Pr-4/Pu-4
IJP(c) JD/WW/JG/WB/DJ/RM
ACCESSION NR: AP5016843 UR/0204/65/005/003/0406/0409
547.26'147'118'122.1:547.21:66.094.382

AUTHOR: Kuz'mina, G. N.; Sher, V. V.; Sanin, P. I.

TITLE: Zinc dialkyl thiophosphates as hydrocarbon antioxidants

SOURCE: Neftekhimiya, v. 5, no. 3, 1965, 406-409

TOPIC TAGS: antioxidant, lubricant additive, phospate salt ester, metal dialkyl thiophosphate

ABSTRACT: Zinc dialkyl dithiophosphates and similar compounds are used as antioxidant additives in lubricants. The purpose of this work was to investigate the relationship between the effectiveness of this type of antioxidant and its structure, particularly the position of the sulfur atoms in the molecule. The following compounds were prepared for the first time:

$[(C_8H_{17}O)_2P(S)S]_2Zn$, $[(n\text{-}C_{16}H_{33}O)_2P(S)S]_2Zn$, $[(n\text{-}C_4H_9O)_2P(O)O]_2Zn$, $[(C_8H_{17}O)_2P(S)O]_2Zn$, $[(n\text{-}C_{16}H_{33}O)_2P(S)O]_2Zn$, $[(C_8H_{17}O)_2P(O)O]_2Zn$, $[(n\text{-}C_{16}H_{33}O)_2P(O)O]_2Zn$.

Card 1/2

L 55930-65
ACCESSION NR: AP5016843

The following known compounds were also prepared and tested:

$[(n\text{-}C_4H_9O)_2P(S)S]_2Zn$, $[(n\text{-}C_4H_9O)_2P(S)O]_2Zn$, $[(n\text{-}C_4H_9)_2P(S)S]_3Zn_2OH$.

All the compounds were tested for their antioxidant effectiveness toward an alkane-cyclane mixture. It was found that the nature of the alkyl group has no appreciable effect on the antioxidant activity of the ester. The activity is primarily a function of the sulfur content and its position. Since mono- and dithiophosphates have very similar activity, it was concluded that the determining factor is the presence of thione sulfur. Among the compounds examined, the most active antioxidant was the basic zinc di-n-butyl dithiophosphate. Orig. art. has: 1 figure and 1 table. [VS]

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva AN SSSR (Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 18Sep64 ENCL: 00 SUB CODE: FP, IC

NO REF SOV: 006 OTHER: 007 ATD PRESS: 4032

Card 2/2

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001549110014-5"

L 63507-65 EPF(c)/EWP(j)/EWT(m)/T RM/DJ
ACCESSION NR: AP5020958 UR/0204/65/005/004/0624/0628
621.892.8:547.26'139'11815'113:1171

AUTHOR: Myannik, E. I.; Sher, V. V.; Sanin, P. I.

TITLE: Synthesis and properties of esters of metaphosphimic acid trimer (synthetic lubricant additives)

SOURCE: Neftekhimiya, v. 5, no. 4, 1965, 624-628

TOPIC TAGS: antiwear additive, antiseize additive, lubricant, organic lubricant, lubricant additive, lubricant property, lubricating oil, lubrication, phosphonitrile

ABSTRACT: Esters of metaphosphimic acid trimer were investigated to determine their antiwear properties. The esters can be synthesized from the corresponding acid chloride, $N_3P_3Cl_6$, by condensation with sodium alkoxides and phenoxides, or by condensation with alcohols and phenols in the presence of pyridine. The isobutyl, decyl and undecyl esters were obtained for the first time. The esters exhibited no tendency to polymerize under reaction conditions. Molecular weights were determined cryoscopically, in benzene. All the esters examined increase the critical load values of oils, the ethyl and propyl esters most of all. At critical loads and above, ad-

Card 1/2

L 63507-65

ACCESSION NR: AP5020958

3

dition of esters increases wear appreciably; this effect may be eliminated by introducing, in addition to alkoxy and phenoxy groups, other, more active groups into the phosphonitrile ring. Orig. art. has: 1 table and 1 figure. [VS]

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva AN SSSR (Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 02Sep64 ENCL: 00 44355 SUB CODE: MT, OC

NO REF SOV: 007 OTHER: 008 ATD PRESS: 4023

KC

Card 2/2

L 65031-65 EWT(m)/EPF(c)/EWP(j) RM

ACCESSION NR: AP5020959 UR/0204/65/005/004/0629/0635

547.26'118'122.1:543.422.4

AUTHOR: Zimina, K. I.; Kotova, G. G.; Sanin, P. I.; Sher, V. V.; Kuz'mina, G. N.

TITLE: Infrared absorption spectra of dialkyldithiophosphates of metals

SOURCE: Neftekhimiya, v. 5, no. 4, 1965, 629-635

TOPIC TAGS: absorption spectrum, nickel compound, lead compound, zinc compound, IR spectrum, electron mobility

ABSTRACT: The spectra of dialkyldithiophosphates of metals were recorded on a UR-10 infrared spectrophotmeter, in the region of frequencies from 400 to 1600 cm^{-1}. The spectral width of the aperture was varied from 3 to 6 cm^{-1} and the scanning rate was 50 cm^{-1}/min. The liquid preparations were placed in a sectional tray, with the thickness of the layer about 0.01 mm. Solid preparations were precipitated from their carbon tetrachloride solutions on an aperture made of potassium bromide, in the form of a crystalline or vitreous layer. A study was made of the dialkyldithiophosphates of zinc, nickel, and lead, containing alkoxy groups of hydrocarbon radicals with different structures: isopropyl, butyl,

Card 1/2

L 65031-65
ACCESSION NR: AP5020959

2-ethylhexyl, decyl, and hexadecyl. The stretching vibrations of the P=S and P-S bonds are shown in a table. The most intensive absorption bands are observed in the frequency intervals 625-665, 750-850, and about 1000 cm^{-1}; these correspond to the stretching vibrations of the P=S, P-O-(C), and C-O-(P) groups. The present article examines the absorption frequencies of the P=S and P-S bonds, which are most significant for dithiophosphates. Results show that the nature of the metal and the structure of the alkyl groups have an effect on the stretching vibrations of the P=S and P-S groups. Frequencies of 661, 642, and 653 cm^{-1} correspond to P=S bonds, and frequencies of 543 and 552 cm^{-1} to P-S bonds. Zinc dialkylthiophosphates are absorbed in the interval 651-662 cm^{-1}; nickel dialkylthiophosphates in the interval 635-655 cm^{-1}; and lead dialkylthiophosphates in the interval 625-640 cm^{-1}. This is evidence of the different mobility of the valence electrons. Orig. art. has: 1 figure and 4 tables

ASSOCIATION: Vsesoyuznyy institut po pererabotke nefti (All-Union Institute for Oil Refining); Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva AN SSSR (Institute for Petrochemical Synthesis, AN SSSR)

SUBMITTED: 09Nov64 ENCL: 00 SUB CODE: OC, NP
NR REF SOV: 006 OTHER: 008

Card 2/2

L 65031-65 EWT(m)/EPF(c)/EWP(j) RM

ACCESSION NR: AT5020959 UR/0204/65/005/004/0629/0635

547.26'118'122.1:543.422.4

AUTHOR: Zimina, K. I.; Kotova, G. G.; Sanin, P. I.; Sher, V. V.; Kuz'mina, G. N.

TITLE: Infrared absorption spectra of dialkyldithiophosphates of metals

SOURCE: Neftekhimiya, v. 5, no. 4, 1965, 629-635

TOPIC TAGS: absorption spectrum, nickel compound, lead compound, zinc compound, IR spectrum, electron mobility

ABSTRACT: The spectra of dialkyldithiophosphates of metals were recorded on a UR-10 infrared spectrophotmeter, in the region of frequencies from 400 to 1600 cm^{-1}. The spectral width of the aperture was varied from 3 to 6 cm^{-1} and the scanning rate was 50 cm^{-1}/min. The liquid preparations were placed in a sectional tray, with the thickness of the layer about 0.01 mm. Solid preparations were precipitated from their carbon tetrachloride solutions on an aperture made of potassium bromide, in the form of a crystalline or vitreous layer. A study was made of the dialkyldithiophosphates of zinc, nickel, and lead, containing alkoxy groups of hydrocarbon radicals with different structures: isopropyl, butyl,

Card 1/2

L 65031-65

ACCESSION NR: AP5020959

4

2-ethylhexyl, decyl, and hexadecyl. The stretching vibrations of the P=S and P-S bonds are shown in a table. The most intensive absorption bands are observed in the frequency intervals 625-665, 750-850, and about 1000 cm^{-1}; these correspond to the stretching vibrations of the P=S, P-O-(C), and C-O-(P) groups. The present article examines the absorption frequencies of the P=S and P-S bonds, which are most significant for dithiophosphates. Results show that the nature of the metal and the structure of the alkyl groups have an effect on the stretching vibrations of the P=S and P-S groups. Frequencies of 661, 642, and 653 cm^{-1} correspond to P=S bonds, and frequencies of 543 and 552 cm^{-1} to P-S bonds. Zinc dialkylthiophosphates are absorbed in the interval 651-662 cm^{-1}; nickel dialkylthiophosphates in the interval 635-655 cm^{-1}; and lead dialkylthiophosphates in the interval 625-640 cm^{-1}. This is evidence of the different mobility of the valence electrons. Orig. art. has: 1 figure and 4 tables

ASSOCIATION: Vsesoyuznyy institut po pererabotke nefti (All-Union Institute for Oil Refining); Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva AN SSSR (Institute for Petrochemical Synthesis, AN SSSR)

SUBMITTED: 09Nov64 ENCL: 0 SUB CODE: OC, MP

NR REF SOV: 006 OTHL: 008

Card 2/2

L 29560-66 EWP(j)/EWT(m)/T(A) RM/DJ
ACC NR: AP6003435 SOURCE CODE: UR/0065/66/000/001/0054/0057

AUTHOR: Zimina, K. I.; Kotova, G. G.; Sher, V. V.; Kuz'mina, G. N.; Sanin, P. I.

ORG: VNII NP

52
B

TITLE: Determination and characteristics of zinc dialkyldithiophosphate-type additives based on infrared absorption spectra

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 1, 1966, 54-57

TOPIC TAGS: lubricant additive, zinc compound, phosphorus compound, sulfur compound, IR spectrum

ABSTRACT: Infrared absorption spectra of motor oil additives based on zinc dialkyldithiophosphates were studied in the 400-700 cm^{-1} range. The alkyl radicals of zinc dialkyldithiophosphates (general formula $(RO)_2P(S)SZnS(S)P(OR')_2$) contained isopropyl, isobutyl, n-butyl, isoamyl, 2-ethylhexyl, sec-heptyl, and higher radicals. It was found that the additives contain basic salts in addition to neutral zinc salts of dialkyldithiophosphates, and that the absorption band with a maximum at 480 cm^{-1} is due to stretching vibrations of the Zn-O bond in such basic salts. The

Card 1/2

UDC: 543.544 : 546.47

presence of the latter has no adverse effect on the quality of the additives. A study of the P-S band of zinc dialkyldithiophosphates showed that if the extinction coefficients of two dialkyldithiophosphates and the molecular mass of one of them are known, the molecular mass and hence the average number of carbon atoms present in the alkyl groups of the second dialkyldithiophosphate can be determined. Orig. art. has: 5 figures and 1 table.

SUB CODE: 07/ SUBM DATE: 00/ ORIG REF: 002/ OTH REF: 000

ACC NR: AP6034495 SOURCE CODE: UR/0204/66/006/005/0797/0805

AUTHOR: Sher, V. V.

ORG: none

TITLE: Second All-Union Scientific and Technical Conference on Oil Additives

SOURCE: Neftekhimiya, v. 6, no. 5, 1966, 797-805

TOPIC TAGS: oil additive, ~~oil additive~~ petroleum engineering conference, fuel additive ~~synthesis~~, lubricant additive ~~production~~, ~~additive action mechanism~~, ~~additive testing~~, ~~additive application~~

ABSTRACT: The Second All-Union Scientific and Technical Conference on Oil Additives was held May 31 to June 4 in Bakn. Sixty-nine papers, which were published prior to the beginning of the proceedings in the form of a collection of articles, were submitted to the conference [Prisadki k maslam. Trudy Vtorogo vsesoyuznogo nauchno-tekhnicheskogo soveshchaniya; sbornik (Oil additives. Transactions of the second All-Union Scientific and Technical Conference; collection). "Khimiya," M., 1966, 400 p, is currently not available at the L of C]. The conference heard reviews of papers published in the collection of papers in the following subject areas: synthesis of additives by A. M. Kuliyev and V. N. Monastyrskiy; mechanism of action of additives by P. I. Sanin and A. B. Vipper; production technology of additives by V. M. Rozhdestvenskiy and V. F. Smovskiy; and testing and applications of oils with additives by I. G. Puchkov, F. G. Suleymanova, K. K. Papok, and Ye. A. Eminova. The

Card 1/2

ACC NR: AP6034495

conference was sponsored by the ministries of Petroleum Processing and the Petrochemical Industry of the USSR and of the AzerbSSR, and the Academy of Sciences AzerbSSR. The conference was attended by 350 representatives of Gosplans, ministries, scientific institutes and organizations, and plants.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 001/

Card 2/2

9. Monthly List of Russian Accessions, Library of Congress, _____ 1953. Unclassified.

L 11512-66 EWT(1)/EWT(m)/EWP(c)/T EWP(c) JAJ

ACC NR: AP6009061 SOURCE CODE: UR/0207/66/000/001/0124/0126

AUTHOR: Kuznetsov, V. M. (Novosibirsk); Lugovtsov, B. A. (Novosibirsk); Sher, Ye. I. (Novosibirsk)

ORG: none

76
47
B

TITLE: The motion of gas bubbles in a fluid affected by a temperature gradient

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 1, 1966, 124-126

TOPIC TAGS: temperature dependence, gas bubble, gas mechanics, viscous fluid, temperature gradient

ABSTRACT: The authors investigate the motion of a gas bubble which is due to the action of surface tension in a weightless viscous fluid with a temperature gradient. A theory is proposed for the steady-state motion of a bubble in a field with a constant temperature gradient in the case of small Reynolds numbers. The experimental results presented agree qualitatively with the theory. It is noted that in view of the difficulties due to the presence of gravity, which caused convective motion of the liquid and the emersion of the bubbles, the experiment is qualitative in nature. The results of the experiment are given in a figure. The bubble at rest started moving 5—6 sec after heating began, and, expanding as a result of vaporization, moved toward the higher temperature. Thus, the experiment agrees with the theory. The editor remarks in a footnote that prior to publication of this article, the

Card 1/2

KUZNETSOV, V.M. (Novosibirsk); LAVRENT'YEV, M.A. (Novosibirsk); SHER, Ye. N. (Novosibirsk)

Directed earthmoving by means of explosives. PMTF no.4:49-50 N-D '60. (MIRA 14:7)

(Earthwork)
(Explosions)

17, 6000

39226

S/207/62/000/003/009/016
I028/I228

AUTHOR: Kuznetzov, V. M. and Sher, Ye. N. (Novosibirsk)

TITLE: Experimental investigation of a directed explosion in the ground

PERIODICAL: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 3, 1962, 53–58

TEXT: The article describes the results of experimental investigations designed to check the method proposed formerly by the authors and Lavrent'ev for disposing the explosive in the ground in a manner ensuring that the ejected ground is completely directed. Two main dispositions of the explosives were investigated: "triangle" and "layer". In each case, four charges were used, the ratios between them being determined by a general formula; somewhat different empirical ratios were tried in a number of experiments. Thirty-one experiments were performed and almost all explosions were filmed. Results (parameters of the crater and parameters of the ejection) are presented in a general table. It was found that the proposed disposition of the explosives ensures that the ejected ground is completely directed; some variations in the law of disposition are proposed, however, in order to diminish the spread. The layer scheme is recommended as being the most economical in practice. E. P. Gorbacheva and A. V. Petrov are mentioned as having taken part in the investigation. The authors thank M. A. Lavrent'ev for guiding them in the work. There are 16 figures and 1 table.

PRESENTED: January 3, 1962

Card 1/1

ACCESSION NO: AP 3002809 S/0207/63/000/003/0084/0090

AUTHORS: Kuznetsov, V. M. (Novosibirsk); Sher, Ye. N. (Novosibirsk)

TITLE: Scaling effect and effect of ground strength in directional blasting

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 3, 1963, 84-90

TOPIC TAGS: directional blasting, explosive, blast center formation, chain blasting, blasting energy

ABSTRACT: The scaling effect and the effect of ground strength on the directional blasting theory proposed by M. A. Lavrent'yev, V. M. Kuznetsov, and Ye. N. Sher (O napravlennom vy*brose grunta pri pomoshchi VV. PMTF, 1960, No. 4) were investigated. The nondimensionalized parameters normally considered are $\frac{J}{\rho g^{0.5} l^{3.5}} = \text{const}$, $\frac{E}{\rho g l^4} = \text{const}$ (where J = impulse of explosive, ρ = density of ground, l = characteristic length, E = energy of explosive). It has been found that in practice this parameter should be modified to $\frac{E\mu}{\rho^2 g l^n} = \text{const}$ (where μ = depends on ground

Card 1/2

ACCESSION NO: AP3002809

properties and amount of explosive, n = varies between 3.5-7). Experimentally it was found that increasing the scale of an explosion decreased the relative amount of earth thrown out. During experiments performed in granite it was found that in the case of multiple charges placed around a perimeter the direction of the ground scatter depends upon the order in which the charges are released (ground is thrown towards the charges which were set off first). It was found that this behavior could be used to decrease the amount of explosive needed to move a certain amount of earth. A theoretical estimate was performed, and it was found that for the same effect the ratio of energy required with simultaneous explosion and chain explosion is E'/E" = 1.69, i.e., chain explosion requires almost 70% less explosive. Orig. art. has: 9 figures and 14 formulas.

ASSOCIATION: Institut gidrodinamiki SO AN SSSR (Hydrodynamics Institute SO AN SSSR, in collaboration with trust "Soyuzvzry*prom")

SUBMITTED: 16Jan63 DATE ACQ: 16Jul63 ENCL: 00

SUB CODE: AR NO REF SOV: 006 OTHER: 000

Card 2/2

ACCESSION NR: AP4034273 S/0207/64/000/002/0066/0073

AUTHORS: Kuznetsov, V. M. (Novosibirsk); Sher, Ye. N. (Novosibirsk)

TITLE: Flow stability of an ideal incompressible fluid in a strip and in a ring

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 2, 1964, 66-73

TOPIC TAGS: incompressible fluid flow, flow stability, ideal incompressible fluid, metal deformation, impulse load, initial state, constant pressure

ABSTRACT: The authors seek a solution for the Laplace equation

$$\varphi_{xx} + \varphi_{yy} = 0 \qquad (1)$$

(the lower indices denote differentiation) in the region bounded by the curve $y = \eta(x,t)$ under the initial condition

$$\varphi(x, y, 0) = \Phi(x, y) \qquad (2)$$

and boundary conditions for $y = \eta(x,t)$

$$\varphi_t + \frac{1}{2}(\varphi_x^2 + \varphi_y^2) + \frac{P}{D} = f(t) \qquad (3)$$

$$\varphi_x \eta_x - \varphi_y + \eta_t = 0 \qquad (4)$$

Card 1/2

USSR/ Analytical Chemistry - Analysis of Inorganic Substances G-2

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 12129

Author : Lur't B.D., Sher Ye.S.
Title : Determination of Micro-Amounts of Mineral Oils in Organic Solvents and on Metal Parts

Orig Pub : Zavod. laboratoriya, 1956, 22, No 7, 784-787

Abstract : Semi-quantitative, accelerated method for determining small amounts of mineral oils in organic solvents (by means of drop colorimetry) is based on formation of oil film on porous paper impregnated with dimethyl glyoximate of Ni. Sensitivity of determination 0.22 g/liter. A procedure has been worked out for quantitative determination of micro-amounts of mineral oils in trichlorethylene, chloroform, dichlorethylene, with the SF-4 spectrophotometer. Sensitivity of determination 0.01 g/liter of solvent, accuracy 2-3%, duration 5-7 minutes

Card 1/1